

## Exporting RINEX with Correct Headers from X90-OPUS

## Question:

Concerning the CHC RINEX conversion tool:



I'm having difficulty understanding what the satellite icon in the software is used for. I can change my antenna type by selecting the icon and then by using the pull down select my antenna type. However, when I export a RINEX file, it doesn't seem to hold add or populate the antenna type field within the RINEX file. It is blank? I'd appreciate any guidance or help you can provide on this subject.

## Answer:

In the X9 Download tool, on the Configuration tab there is an item to 'Show Advanced Settings' on the 'Configuration' tab:

Your Email	ms@igage.com		
Show Advanced Settings	Normal	~ <	$\langle \Box$
PPP Service	OPUS (United States)	~	Export 8.3 Filenames
Change it to 'Normal' (or advanc	ed).		

Then on the main 'X90 Occupations' tab you will get a new Export button:

Operator	MES		New	upation to Proj		
Agency	IMC	$\langle \rangle$	Mov	ove to _New		
[	🖞 ốc	Export RINEX	(	Submit to		

If you use this 'Export RINEX' button, then the resulting RINEX file will have all of the fields (including the HI) stuffed properly:



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<u>F</u> ile <u>E</u> dit F <u>o</u> rmat <u>V</u> iew	<u>H</u> elp							
2.11	OBSERVATION DATA	M (MIXED)	RINEX VERSION / TYPE		^			
teqc 2013Mar15	X90-B9200	20150129 15:51:01UT	CPGM / RUN BY / DATE					
Linux2.4.20-8 i386	gcc Win32-MinGW32 =		COMMENT					
2.10	OBSERVATION DATA	M (MIXED)	COMMENT					
CHC RINEX 2.0	CHC	20141231 232450 UTC	COMMENT					
Format: BD950/970			COMMENT					
POINT 1004 🧠 💶			MARKER NAME					
1004 🧲			MARKER NUMBER					
MES	IMC		OBSERVER / AGENCY					
018197	CHC X90D-OPUS 🧲	60.0	REC # / TYPE / VERS					
	CHCX90D-OPUS NON	E 🧲	ANT # / TYPE					
-1810075.8859 -440	9369.7839 4226127.1	252	APPROX POSITION XYZ					
4.1000	0.0000 0.0	000	ANTENNA: DELTA H/E/N					
1 1			WAVELENGTH FACT L1/2					
8 C1 L1	D1 S1 P2	L2 D2 S2	# / TYPES OF OBSERV					
5.0000			INTERVAL					
Original filename 0	)18197_13_097_A2		COMMENT					
2013 4 6	17 16 25.000	0000 GPS	TIME OF FIRST OBS					
16			LEAP SECONDS					
			END OF HEADER					
13 4 6 17 16 25.	0000000 0 9G01G25G	14G32G22G31G12G18G11						
22309087.485	-54303.566 2	798.633 46.0	22309093.009		~			
<					>			
			Ln 1. Col 1					

And, when you export using this button the file is not decimated so there will be 5 second (by default) intervals.

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However, if you insist on using HCRinex:

If you push the GEAR button and enter the information on the Options screen:

Output RINEX Version	2.10 💌	]	
RunBy/Obsv/Agency	СНС		
Comment			
Maker Name			
Rec #/Type/Vers			
Ant #/Type	ANTNUM123	ANT_	TYPE_YESNO NONE
Approx Pos XYZ	0.000000	0.000000	0.000000
Ant Delta H/E/N	0.000000	0.000000	0.000000
Satellite Systems ✓ GPS ✓ GLO └ Gi Observation Types ✓ C ✓ L ✓ D ✓	alileo 🗆 QZSS 🗐 S	SBAS I BeiDou	Excluded Satellites
Option:	Debug		OK Cance

It will generate the correct headers:



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1	ile	<u>E</u> dit	Fg	rmat	: <u>V</u> i	iew	<u>H</u> elp								
	CHC Form 0160 0160	2. RIN mat: 524_ 524_ 524_	10 IEX BD 13_ 13_	2.0 950 2 2	/97	0	OBSERVA CHC	TION	DATA	M (M 2015	NIXED) 50129 1	L55703 UTC	RINEX VERSION / TYPE PGM / RUN BY / DATE COMMENT MARKER NAME MARKER NUMBER OBSERVER / AGENCY REC # / TYPE / VERS		^
4	4NTN \-17	IUM1 2 <u>996</u> 1	.23 505.	<u>960</u> 1	1	) 449	ANT_TYP 3929.180	E_YE 0 4	SNO NON 141173.	NE . 2380			ANT # / TYPE APPROX POSITION XYZ WAVELENGTH FACT L1/2		
		8 5.	000	C1		L1	D1	<b>S1</b>	P2	L2	D2	<mark>52</mark>	# / TYPES OF OBSERV INTERVAL		
	20	913		9		13	3	14	5.00	000000	GF	PS .	TIME OF FIRST OBS		
	20	913		9		14	3	16	20.00	000000	GF	°S	TIME OF LAST OBS END OF HEADER		
	13	9	13	3	14	5.	0000000	0 1	0G24G21	1G27G22	G15G 6	5G 3G19G18	G14		~
4	C														>
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However, the settings made on the 'Options' dialog are not persistent (so when you close the tool and reopen it you will have to set everything up again) and on a Win8 64 machine you have to run the tool as an administrator.

There is another advantage of using the 'Export' button. The result is automatically run through TEQC (which is the front end for OPUS and most other processing tools.) If you use the Export button, I don't think that it is possible to make an illegally formed RINEX file. Which makes the easier to use and easier to configure method, well worth the 'less effort' O.